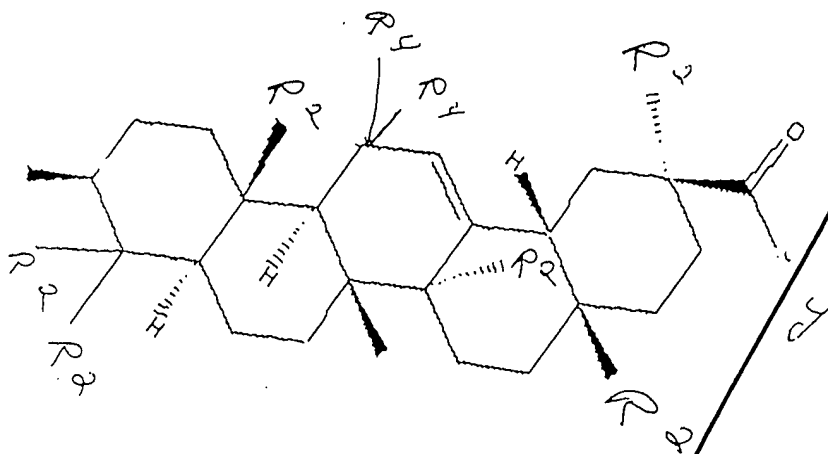


I Claim:

1. A method of treating Kaposi's sarcoma comprising the steps of  
administering to the patient a therapeutic a derivative of a triterpenoid acid and  
wherein the triterpenoid acid has the following structural formula:



wherein:

$Y = OR^1, NR^1_2, O--M^1$ ;

$R^1 = H, \text{ LOWER ALKYL,}$

$M^1 = Na.^+, K^+, Mg^{++}, Ca^{++} \text{ ions;}$

$R^2 = CH^2 OR^1 \text{ or } CH_3$ ;

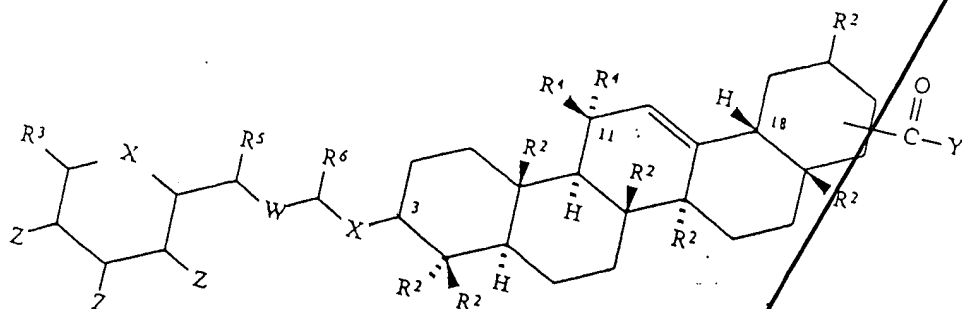
$R^4 = H, OH, SO_3 --M^1, NH(CH_2)_n NH^2, \text{ or } NH--Ph--(NH_2)_n$  wherein  $n=1-8$  and Ph is a

phenyl or naphthyl ring substituted with up to 3 amine functionalities and the remaining  
substitutions can be H,  $R^1$ ,  $R^2$  or  $CO_2 R^1$ ;

or both  $R^4$  taken together are oxo;

$X = O, S, NR^1_2$ .

2. A method of treating Kaposi's sarcoma comprising the steps of  
 administering to the patient a derivative of a triterpenoid acid and wherein the  
 triterpenoid acid has the following structural formula:



wherein:

$Y = OR^1, NR^1_2, O-M^1$ ;

$R^1 = H, \text{ LOWER ALKYL,}$

$M^1 = Na^+, K^+, Mg^{++}, Ca^{++} \text{ ions;}$

$R^2 = CH^2OR^1 \text{ or } CH_3$ ;

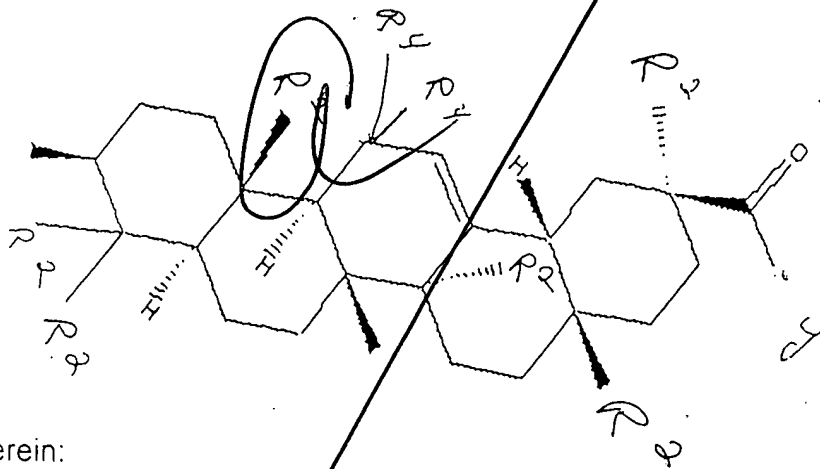
$R^3 = H, CH_3, \text{ lower alkyl, } COY, CH_2OH, CH_2OCH_2CH=CH_2, CH_2OSO_2M^1$ ;

$Z = NR^1, NR^1Ac, NR^1Bz, H, OCH_3, \text{ lower alkyl, OH, } SO_3--M^1, OCH_2CH=CH_2, OCH_2CO_2$

$H \text{ or } O\text{-glucoside wherein a glucoside includes glucose, fucose, galactose, mannose, arabinose or xylose;}$

$R^4 = H, OH, SO_2--M^1, NH(CH_2)_nNH^2, \text{ or } NH--Ph--(NH_2)_n \text{ wherein } n=1-8 \text{ and Ph is a}$

W= C=O, C=CR<sup>1</sup><sub>2</sub>, CR<sup>1</sup>CR<sup>1</sup><sub>3</sub>, CR<sup>1</sup>--CR<sup>1</sup><sub>2</sub>OR<sup>1</sup>, COR<sup>1</sup>--CR<sup>1</sup>OR<sup>1</sup><sub>2</sub>, COR<sup>1</sup>CR<sup>1</sup><sub>2</sub>OR<sup>1</sup>,  
CR<sup>1</sup>CR<sup>1</sup><sub>2</sub>NR<sup>1</sup><sub>2</sub>, CR<sup>1</sup>CR<sup>1</sup><sub>2</sub>OCR<sup>1</sup>COY.

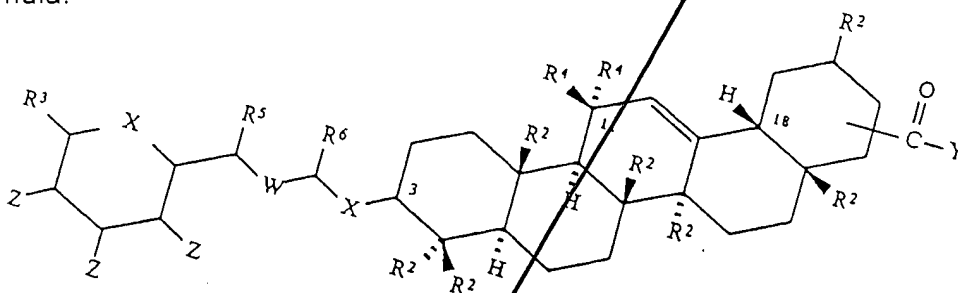
[illegible]
$$R^2 = CH^2OR^1 \text{ or } CH_3;$$

$R^4 = H, OH, SO_3--M^1, NH(CH_2)_n NH^2$ , or  $NH--Ph--(NH_2)_n$  wherein  $n=1-8$  and  $Ph$  is a phenyl or naphthyl ring substituted with up to 3 amine functionalities and the remaining substitutions can be  $H, R^1, R^2$  or  $CO_2 R^1$ ;

or both  $R^4$  taken together are oxo;

$X=O, S, NR^1_2$ .

4. A pharmaceutical composition for treating Kaposi's sarcoma, comprising a therapeutically effective amount of a triterpenoid acid having the following structural formula:



wherein:

$Y=OR^1, NR^1_2, O--M^1$ ;

$R^1 = H, \text{ LOWER ALKYL,}$

$M^1 = Na^+, K^+, Mg^{++}, Ca^{++}$  ions;

$R^2 = CH^2 OR^1$  or  $CH_3$  ;

$R^3 = H, CH_3, \text{lower alkyl}, COY, CH_2 OH, CH_2 OCH_2 CH=CH_2, CH_2 OSO_3^- M^1$  ;

$Z = NR^1, NR^1 Ac, NR^1 Bz, H, OCH_3, \text{lower alkyl}, OH, SO_3^- M^1, OCH_2 CH=CH_2, OCH_2 CO_2$

H or O-glucoside wherein a glucoside includes glucose, fucose, galactose, mannose, arabinose or xylose;

$R^4 = H, OH, SO_3^- M^1, NH(CH_2)_n NH^2$ , or  $NH-Ph-(NH_2)_n$  wherein  $n=1-8$  and Ph is a phenyl or naphthyl ring substituted with up to 3 amine functionalities and the remaining substitutions can be H,  $R^1, R^2$  or  $CO_2 R^1$  ;

or both  $R^4$  taken together are oxo;

$R^5$  and  $R^6 = H, R^1$  or taken together to form a 5 or 6 membered carbocyclic ring;

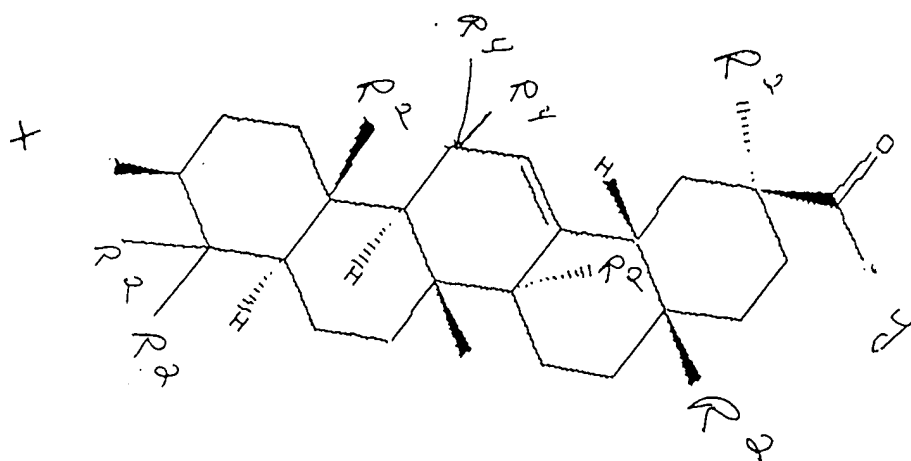
$X = O, S, NR^1_2$

$W = C=O, C=CR^1_2, CR^1 CR^1_3, CR^1 -CR^1_2 OR^1, COR^1 -CR^1 OR^1_2, COR^1 CR^1_2 OR^1, CR^1 CR^1_2 NR^1_2, CR^1 CR^1_2 OCR^1 COY$ .

5. A method of treating Epstein Barr virus comprising the steps of

administering to the patient a therapeutic a derivative of a triterpenoid acid and

wherein the triterpenoid acid has the following structural formula:



wherein:

$Y = OR^1, NR^1_2, O--M^1$  ;

$R^1 = H, \text{ LOWER ALKYL,}$

$M^1 = Na.^+, K.^+, Mg^{++}, Ca^{++}$  ions;

$R^2 = CH^2 OR^1$  or  $CH_3$  ;

$R^4 = H, OH, SO_3--M^1, NH(CH_2)_n NH^2$ , or  $NH--Ph--(NH_2)_n$  wherein  $n=1-8$  and Ph is a phenyl or naphthyl ring substituted with up to 3 amine functionalities and the remaining substitutions can be H,  $R^1, R^2$  or  $CO_2 R^1$  ;

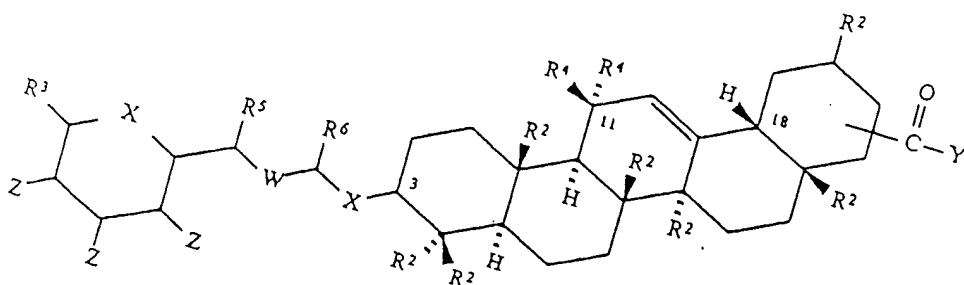
or both  $R^4$  taken together are oxo;

$X = O, S, NR^1_2$ .

6. A method of treating Epstein Barr virus comprising the steps of

administering to the patient a derivative of a triterpenoid acid and wherein the

triterpenoid acid has the following structural formula:



wherein:

$Y = OR^1, NR^1_2, O--M^1$  ;

$R^1 = H, \text{ LOWER ALKYL,}$

$M^1 = Na.^+, K^+, Mg^{++}, Ca^{++}$  ions;

$R^2 = CH^2 OR^1 \text{ or } CH_3$  ;

$R^3 = H, CH_3, \text{ lower alkyl, COY, } CH_2 OH, CH_2 OCH_2 CH=CH_2, CH_2 OSO--_3 M^1$  ;

$Z = NR^1, NR^1 Ac, NR^1 Bz, H, OCH_3, \text{ lower alkyl, OH, } SO_3 --M^1, OCH_2 CH=CH_2, OCH_2 CO_2$

H or O-glucoside wherein a glucoside includes glucose, fucose, galactose, mannose, arabinose or xylose;

$R^4 = H, OH, SO_3 --M.^1, NH(CH_2)_n NH^2, \text{ or } NH--Ph--(NH_2)_n$  wherein  $n=1-8$  and Ph is a phenyl or naphthyl ring substituted with up to 3 amine functionalities and the remaining substitutions can be H,  $R^1, R^2$  or  $CO_2 R^1$  ;

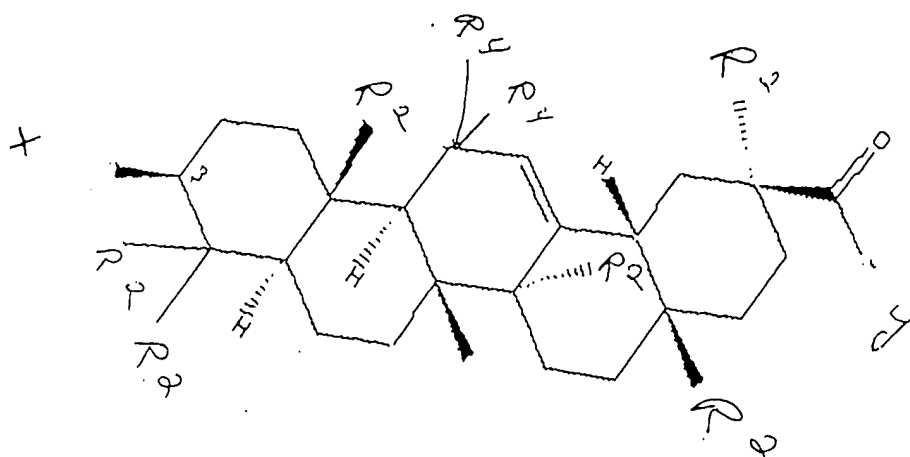
or both  $R^4$  taken together are oxo;

$R^5$  and  $R^6 = H, R^1$  or taken together to form a 5 or 6 membered carbocyclic ring;

$X = O, S, NR^1_2$

$W = C=O, C=CR^1_2, CR^1 CR^1_3, CR^1 --CR^1_2 OR^1, COR^1 --CR^1 OR^1_2, COR^1 CR^1_2 OR^1, CR^1 CR^1_2 NR^1_2, CR^1 CR^1_2 OCR^1 COY.$

7. A pharmaceutical composition for treating Epstein Barr virus, comprising a therapeutically effective amount of a triterpenoid acid having the following structural formula:



wherein:

$Y = OR^1, NR^1_2, O--M^1$ ;

$R^1 = H, \text{ LOWER ALKYL,}$

$M^1 = Na^+, K^+, Mg^{++}, Ca^{++}$  ions;

$R^2 = CH^2 OR^1 \text{ or } CH_3$ ;

$R^4 = H, OH, SO_3 --M^1, NH(CH_2)_n NH^2, \text{ or } NH--Ph--(NH_2)_n$  wherein  $n=1-8$  and Ph is a

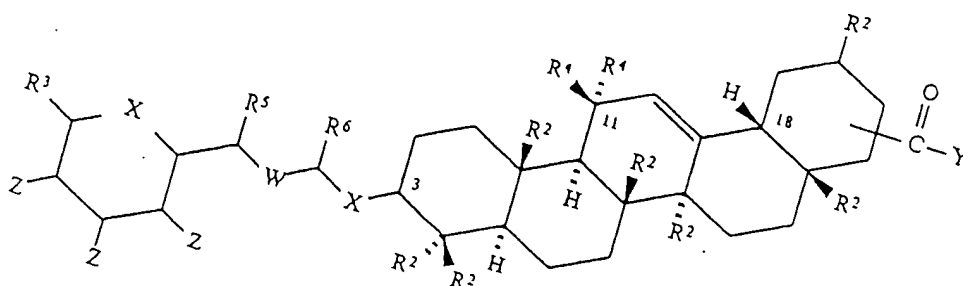
phenyl or naphthyl ring substituted with up to 3 amine functionalities and the remaining substitutions can be H,  $R^1, R^2$  or  $CO_2 R^1$ ;

or both  $R^4$  taken together are oxo;

$X = O, S, NR^1_2$ .

8. A pharmaceutical composition for treating Epstein Barr virus, comprising a therapeutically effective amount of a triterpenoid acid having the following structural formula:





wherein:

$Y = OR^1, NR^1_2, O--M^1$  ;

$R^1 = H, \text{ LOWER ALKYL,}$

$M^1 = Na^+, K^+, Mg^{++}, Ca^{++}$  ions;

$R^2 = CH_2OR^1 \text{ or } CH_3$  ;

$R^3 = H, CH_3, \text{ lower alkyl, } COY, CH_2OH, CH_2OCH_2CH=CH_2, CH_2OSO_3--M^1$  ;

$Z = NR^1, NR^1Ac, NR^1Bz, H, OCH_3, \text{ lower alkyl, } OH, SO_3--M^1, OCH_2CH=CH_2, OCH_2CO_2$

$H$  or  $O$ -glucoside wherein a glucoside includes glucose, fucose, galactose, mannose, arabinose or xylose;

$R^4 = H, OH, SO_3--M^1, NH(CH_2)_nNH^2, \text{ or } NH--Ph--(NH_2)_n$  wherein  $n=1-8$  and  $Ph$  is a phenyl or naphthyl ring substituted with up to 3 amine functionalities and the remaining substitutions can be  $H, R^1, R^2$  or  $CO_2R^1$  ;

or both  $R^4$  taken together are oxo;

$R^5$  and  $R^6 = H, R^1$  or taken together to form a 5 or 6 membered carbocyclic ring;

$X=O, S, NR^1_2$

$W=C=O, C=CR^1_2, CR^1 CR^1_3, CR^1 --CR^1_2 OR^1, COR^1 --CR^1 OR^1_2, COR^1 CR^1_2 OR^1,$

$CR^1 CR^1_2 NR^1_2, CR^1 CR^1_2 OCR^1 COY.$

9. The method according to claim 1 wherein the dosage is in the range of 2.5 mg to 50 mg/kg.

10. The method according to claim 5 wherein the dosage is in the range of 2.5 mg to 50 mg/kg.

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